

## SECTION-A

## Notes:

- 1) Attempting all MCQs is compulsory. This paper along with the OMR sheet must be returned to the superintendent after due time.
- 2) Fill the circle (A, B, C, D), which one is correct with blue or black ball point in separate OMR Sheet like ●
- 3) If more than one circle in the OMR sheet is filled then no credit will be given to such answer.

- i. Difference in magnitude of a property in different directions is known as
 

<input type="radio"/> (A) Cleavage	<input type="radio"/> (B) Isotropy	<input type="radio"/> (C) Polymorphism	<input checked="" type="radio"/> (D) Anisotropy
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- ii. An orbital that is filled first with electrons, is
 

<input checked="" type="radio"/> (A) 3d	<input type="radio"/> (B) 4p	<input type="radio"/> (C) 5s	<input type="radio"/> (D) 5p
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- iii. According to lowry-Bronsted concept, water is in nature
 

<input type="radio"/> (A) Acidic	<input type="radio"/> (B) Basic	<input type="radio"/> (C) Neutral	<input checked="" type="radio"/> (D) Amphoteric
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- iv. The solubility of gases decrease with increase in
 

<input type="radio"/> (A) Pressure	<input type="radio"/> (B) Volume	<input checked="" type="radio"/> (C) Temperature	<input type="radio"/> (D) All of these
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- v. When reactants and products are liquids or solids then
 

<input type="radio"/> (A) $\Delta H=0$	<input checked="" type="radio"/> (B) $\Delta H=\Delta E$	<input type="radio"/> (C) $\Delta H=\Delta E+P\Delta V$	<input type="radio"/> (D) $\Delta H=P\Delta V$
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- vi. At same temperature and pressure, which gas will diffuse most slowly
 

<input checked="" type="radio"/> (A) $\text{CO}_2$	<input type="radio"/> (B) $\text{N}_2$	<input type="radio"/> (C) $\text{NH}_3$	<input type="radio"/> (D) $\text{CH}_4$
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- vii. Bond energy of a covalent bond decreases with increase in
 

<input type="radio"/> (A) Polarity	<input type="radio"/> (B) Multiplicity	<input checked="" type="radio"/> (C) Size of atoms	<input type="radio"/> (D) Ionic character
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- viii. At equilibrium state, the pressures / concentrations of reactants and products
 

<input type="radio"/> (A) Increase	<input type="radio"/> (B) Decrease	<input type="radio"/> (C) Equal	<input checked="" type="radio"/> (D) Constant
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- ix. When equal moles of hydrogen and oxygen react to form water, then the limiting reactant is
 

<input checked="" type="radio"/> (A) $\text{H}_2$	<input type="radio"/> (B) $\text{O}_2$	<input type="radio"/> (C) $\text{H}_2\text{O}$	<input type="radio"/> (D) None
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- x. Which element is liberated at cathode during electrolysis of aqueous NaCl solution
 

<input type="radio"/> (A) Sodium	<input checked="" type="radio"/> (B) Hydrogen	<input type="radio"/> (C) Chlorine	<input type="radio"/> (D) Oxygen
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- xi. One molal aqueous solution of which salt has the highest boiling point
 

<input type="radio"/> (A) NaCl	<input type="radio"/> (B) $\text{CaCl}_2$	<input type="radio"/> (C) $\text{MgCl}_2$	<input checked="" type="radio"/> (D) $\text{AlCl}_3$
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- xii. According to Hess's law, enthalpy change for a cyclic process is
 

<input checked="" type="radio"/> (A) Zero	<input type="radio"/> (B) Low	<input type="radio"/> (C) Moderate	<input type="radio"/> (D) High
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- xiii. Order of a reaction may be
 

<input type="radio"/> (A) Zero	<input type="radio"/> (B) Whole number	<input type="radio"/> (C) Fractional	<input checked="" type="radio"/> (D) All of these
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- xiv. A solute in solution neither precipitates nor further dissolves when
 

<input type="radio"/> (A) $IP > K_{sp}$	<input type="radio"/> (B) $IP < K_{sp}$	<input checked="" type="radio"/> (C) $IP = K_{sp}$	<input type="radio"/> (D) $IP \geq K_{sp}$
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- xv. Which buffer solution changes the added strong acid into weak acid
 

<input type="radio"/> (A) Neutral buffer	<input checked="" type="radio"/> (B) Basic buffer	<input type="radio"/> (C) Acid buffer	<input type="radio"/> (D) None of these
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- xvi. The geometry of a triatomic molecule with zero dipole moment is
 

<input type="radio"/> (A) Planar trigonal	<input type="radio"/> (B) tetrahedral	<input type="radio"/> (C) Angular	<input checked="" type="radio"/> (D) Linear
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- xvii. An increase in internal energy of a system may cause
 

<input type="radio"/> (A) Chemical change	<input type="radio"/> (B) Phase change	<input type="radio"/> (C) Temperature rise	<input checked="" type="radio"/> (D) All of these
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- xviii. Oxidation number of hydrogen in metal hydrides is
 

<input checked="" type="radio"/> (A) -1	<input type="radio"/> (B) +1	<input type="radio"/> (C) +2	<input type="radio"/> (D) Zero
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